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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,101	08/17/2001	Anh Nguyen	XMS-104	3650

7590 12/09/2004
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EXAMINER

HASHEM, LISA

ART UNIT PAPER NUMBER

2645

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/931,101	Applicant(s) NGUYEN ET AL.	
	Examiner Lisa Hashem	Art Unit 2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-25 and 27-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Examiner acknowledges the cancellation of claims 2 and 26 of the instant application as noted in the Amendment filed on July 23, 2004.
2. Examiner acknowledges the correction of the 35 USC 112 rejection of claim 1 and title noted in the Amendment filed on July 23, 2004. The 35 USC 112 rejection of claim 1 is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-25, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,216,434 by Fukumura in view of U.S. Patent No. 6,329,954 by Fuchs et al, hereinafter Fuchs.

Regarding claim 1, Fukumura discloses an antenna connection detection system for confirming the connections of two antennae to a radio receiver (see Abstract), comprising: a receiver having a first antenna connection port (Figure 1, 3) and a second antenna connection port (Figure 1, 4); a first antenna (Figure 1, 1) and a second antenna (Figure 1, 2); and a circuit via which the first and second antennae are in communication with the receiver (column 4, lines 11-23), wherein the receiver supplies a signal to the first antenna connection port and detects whether said signal is present at the second antenna connection port, thereby confirming that

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both the first and second antennae are connected to the radio receiver (column 4, line 51 – column 5, line 13).

Fukumura does not disclose the antenna connection detection system comprising a LNA module.

Fuchs discloses a combination satellite and terrestrial antenna system for a single-source application, comprising: a receiver having a first antenna connection port and a second antenna connection port (Figure 2: by the receiver); a first antenna (Figure 2, 110) and a second antenna (Figure 2, 120); and a circuit via which the first and second antennae are in communication with the receiver (Figure 2, 172; Figure 5, 132); and a combined antenna system including a satellite antenna and terrestrial antenna (see Figure 2; column 3, lines 57-67), wherein the circuit comprises a low noise amplifier (LNA) module (Figure 2, 172 -> Note: 'LNA' is misspelled in Figure) and the first and second antenna communicate with each other through the LNA module (column 4, lines 14-19 and lines 43-56).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Fukumura to include a LNA module as taught by Fuchs to amplify RF signals channeled through the two antennae and to receive broadcast radio signals. One of ordinary skill in the art would have been lead to make such a modification since the LNA module can be included in the detect circuit to detect a connection or breakage of the system.

Regarding claim 3, the system of claim 1, wherein Fuchs further discloses the first antenna is a satellite broadcast reception antenna and the second antenna is a terrestrial broadcast reception antenna (column 3, lines 57-67).

Regarding claim 4, the system of claim 1, wherein Fuchs further discloses the LNA module comprises at least two low noise amplifiers and wherein the first and second antenna are in communication with respective low noise amplifiers (see Figure 2, 172).

Regarding claim 5, the system of claim 1, wherein Fukumura further discloses the circuit redirects the signal to the second antenna connection port (column 4, line 51 – column 5, line 13).

Regarding claim 6, the system of claim 1, wherein Fukumura further discloses a transistor circuit for detecting a presence of the signal (Figure 1, 533; column 2, lines 44-48).

Regarding claim 7, the system of claim 6, wherein Fukumura further discloses the transistor circuit (Figure 1, 533) is located in the radio receiver (Figure 1, 5).

Regarding claim 8, the system of claim 1, wherein Fukumura further discloses the signal is a voltage signal (column 4, lines 51-56).

Regarding claim 9 the system of claim 1, wherein Fukumura further discloses means for indicating whether either the first or the second antenna is disconnected (column 3, lines 11-39; column 5, lines 2-13).

Regarding claim 10, please see the 103(a) rejection to claim 1 above, regarding the LNA module, above to reject the system in claim 10, wherein Fukumura further discloses a system for detecting whether two antennae are connected to a receiver (see Abstract), comprising: a first RF feed (Figure 1, 3) from a first antenna (Figure 1, 1); a second RF feed (Figure 1, 4) from a second antenna (Figure 1, 2); a signal generating source (Figure 1, 54) in communication with the first RF feed; a signal detection circuit (Figure 1, 53) in communication with the second RF feed (column 2, lines 14-51); and a DC pathway that includes the first and second RF feeds and

electrically connects the signal generating source and signal detection circuit (column 2, lines 52-57).

Regarding claims 11-12, please see the rejection to claim 3 above, to reject the system in claims 11-12.

Regarding claim 13, the system of claim 11, wherein Fuchs further discloses the LNA module comprises a first LNA and a second LNA that are in communication with the first and second antenna, respectively, and wherein outputs of the first and second LNA are in communication, respectively, with the first and second antenna feeds (see Figure 2, 172).

Regarding claim 14, the system of claim 11, wherein Fukumura further discloses the signal generating source (Figure 1, 54) and signal detection circuit (Figure 1, 53) are located in the receiver (Figure 1,

Regarding claim 15, the system of claim 11, wherein Fukumura further discloses the signal detection circuit comprises a transistor (Figure 1, 533; column 2, lines 44-48).

Regarding claim 16, the system of claim 11, wherein Fukumura further discloses the system comprises a voltage regulator (column 4, lines 51-56).

Regarding claim 17, the system of claim 11, wherein Fukumura further discloses the system comprises means for indicating whether either the first or the second antenna is disconnected (column 3, lines 11-39; column 5, lines 2-13).

Regarding claim 18, Fukumura discloses a system for confirming that two antennae (Figure 1: 1, 2) are connected to a radio receiver (Figure 1, 5), comprising: a radio receiver (Figure 1, 5) comprising a signal generating source (Figure 1, 54), a first antenna feed connection port (Figure 1, 3), a second antenna feed connection port (Figure 1, 4), and a signal detection

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circuit (Figure 1, 53); and a signal pathway that electrically connects the signal generating source and the signal detection circuit to each other (column 2, lines 52-57).

Fukumura does not disclose a system including: a low noise amplifier (LNA) module comprising a first LNA and a second LNA, wherein the first LNA is in communication with a first antenna and the second LNA is in communication with a second antenna, and wherein outputs of the first and second LNAs are in communication, respectively, with the first antenna feed connection port and the second antenna feed connection port; and a signal pathway that passes, at least in part, through the LNA module and electrically connects the signal generating source and the signal detection circuit to each other.

Fuchs discloses a combination satellite and terrestrial antenna system for a single-source application, comprising: a receiver having a first antenna connection port and a second antenna connection port (Figure 2: by the receiver); a first antenna (Figure 2, 110) and a second antenna (Figure 2, 120); and a circuit via which the first and second antennae are in communication with the receiver (Figure 2, 172; Figure 5, 132); and a combined antenna system including a satellite antenna and terrestrial antenna (see Figure 2; column 3, lines 57-67), wherein the circuit comprises a low noise amplifier (LNA) module (Figure 2, 172 -> Note: 'LNA' is misspelled in Figure) and the first and second antenna communicate with each other through the LNA module (column 4, lines 14-19 and lines 43-56); and a signal pathway that passes, at least in part, through the LNA module (Figure 2: 160, 162).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Fukumura to include a LNA module as taught by Fuchs to amplify RF signals channeled through the two antennae. One of ordinary skill in the art would

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have been lead to make such a modification since LNA module can be included in the detect circuit to detect a connection or breakage of the system and the two low noise amplifiers that are included in the LNA module amplify RF signals channeled through the two antennae and the system can determine if both antennae are connected to the radio receiver via the LNA module.

Regarding claim 19, the system of claim 18, wherein Fukumura in view of Fuchs further discloses the LNA module further comprises a voltage regulator (Fukumura: column 4, lines 51-56), wherein the LNA module is included in the detect circuit as noted in claim 18.

Regarding claim 20, the system of claim 18, wherein Fukumura further discloses the signal generating source comprises a source of voltage (Figure 1, 54; column 2, lines 52-57).

Regarding claim 21, the system of claim 18 mentioned above, wherein Fukumura further discloses the signal detection circuit comprises a transistor circuit (Figure 1, 533; column 2, lines 44-48).

Regarding claims 22-23, please see the rejection to claim 3 above, to reject the system in claims 22-23.

Regarding claim 24, the system of claim 18, wherein Fukumura further discloses the signal path way comprises a diode (Figure 1, 539; column 2, lines 48-51; column 3, lines 19-49).

Regarding claim 25, please see the 103(a) rejection to claim 18 above, regarding the LNA module, above to reject the system in claim 25, wherein Fukumura further discloses a method of detecting antennae connection (see Abstract), comprising the steps of supplying a detection signal to a first antenna connection port (Figure 1, 3); routing said detection signal through a first antenna feed line (Figure 1, 31); returning said detection signal through a second antenna feed

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line (Figure 1, 41); and detecting a presence of said detection signal at a second antenna connection port (column 4, line 24 – column 5, line 13).

Regarding claim 27, please see the rejection of claim 13 above, to reject the method in claim 27.

Regarding claim 28, the method of claim 25, wherein Fukumura in view of Fuchs further discloses utilizing the detection signal as a power source for at least one low noise amplifier (LNA) (Fukumura: column 4, lines 51-56), wherein the LNA module is included in the detect circuit as noted in claim 25.

Regarding claim 29, the method of claim 25, wherein Fukumura further discloses the system comprising generating an indication of whether the detection signal is detected at the second antenna connection port (column 5, lines 7-13).

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Response to Amendment

5. Applicant's arguments, see the Amendment filed on July 23, 2004, with respect to the rejection(s) of claim(s) 1, 3-25 and 27-29 under Fukumura (claims 1, 5-9, 10, 25, and 29) and Fukumura in view of Petros (claims 3-4, 11-17, 18-24, and 27-28) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made of Fukumura in view of Fuchs.

6. Accordingly, this action is **NON-FINAL**.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- U.S. Patent No. 6,538,611 by Noro discloses an antenna apparatus including a satellite antenna and a terrestrial antenna having a simplified structure, comprising a LNA module with two amplifiers

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
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Or faxed to:

(703) 872-9314 (for formal communications intended for entry)

Or call:

(703) 306-0377 (for customer service assistance)

Hand-delivered responses should be brought to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Hashem whose telephone number is (703) 305-4302. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (703) 305-4895. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

LH

lh

December 3, 2004



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